

# TRANSLATION

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from:

## CLAIMS

- 5047  
A
- 1 - Text storage procedure (1) according to which:
    - a dictionary of words is created in a multidimensional conceptual reference,
    - each conceptual word is compared to at least one portion of the text to be stored (1) to those of the dictionary in order to determine the position of this word in said reference and
    - the resultant ( $T_1$ ) of the positions of all the conceptual words of the text portion to be stored (1) is determined in order to determine the position of a global conceptualization of the text portion (1) in said reference and to store that position.
  - 2 - Procedure according to claim 1, in which, to determine the resultant of the positions in the reference of all the conceptual words of the text portion to be stored, each word position in the reference is first associated with its position in the text and its syntactic role.
  - 3 - Procedure according to claim 1, in which, to determine the resultant ( $T_1$ ) of the positions of the conceptual words of the text portion to be stored (1), these positions are multiplexed using a composition algorithm.

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4 - Procedure according to claim 3, in which the composition algorithm consists in finding the vectorial sum of the positions of all the conceptual words of the text portion to be stored (1).

5 - Procedure according to claim 4, in which the composition algorithm also consists in amplifying the importance of the most important concepts.

6 - Procedure according to claim 1, in which the resultant  $\vec{T}_1$  of the positions of all the conceptual words of the text portion to be stored (1) is normalized.

7 - Procedure according to claim 1, in which the multidimensional conceptual reference is made orthonormal.

8 - Procedure according to claim 1, in which, for each word to be included in the dictionary, all the concepts related to the conceptual reference to which this word is likely to make reference are searched and, in terms of these concepts, the word is assigned a position in the conceptual reference.

9 - Procedure according to claim 1, in which an syntactic analysis of all the words of the text portion (1) is made in order to extract the conceptual words.

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10 - Procedure according to claim 1, in which the inflected words of the text portion to be stored (1) are transformed into the non-inflected form.

11 - Procedure for storage of a text containing a number of text portions in which each text portion is stored according to the procedure per claim 1.

12 - Procedure according to claim 11, in which the text is broken up into a number of segments whose respective global conceptualization positions in the conceptual reference are determined, and the respective global conceptualization portions of the neighboring segments in the text are compared in order to delimit the text portions.

13 - Procedure according to claim 11, in which, in order to compare the respective global conceptualization positions of two neighboring segments of the text, the distance between these positions is determined and, in the event this distance is under a predefined threshold, the two segments are combined to form a new segment.

14 - Procedure according to claim 13, in which the text portions are formed by iterative groupings of segments.

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15 - Procedure for searching among a number of stored texts according to the storage procedure of claim 1 for those that deal with a particular question, in which:

- as for any text storage, the position in the multidimensional conceptual reference of a global conceptualization of the question is determined by determining the resultant  $\vec{Q}$  of the positions of all the conceptual words of the question and
- the position of the global conceptualization of the question is compared to the homologous positions of the stored texts in order to select at least one of them corresponding to a searched text.

16 - Procedure according to claim 15, in which the positions of the global conceptualizations of the question and of the stored texts are compared by determining, for each text, the distance between the two respective positions of the question and of the text.

17 - Procedure according to claim 15, in which calculation of the distance between two positions in the conceptual reference utilizes the scalar product of these positions.

18 - Procedure according to claim 17, in which the distance between two positions in the conceptual reference is

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calculated using the following formula:

$$D = 1 - \frac{(\vec{X}, \vec{Y})}{\|\vec{X}\| \cdot \|\vec{Y}\|}$$

in which

- $\vec{X}$  and  $\vec{Y}$  represent the two positions,
- $D$  represents the distance between the two positions  $\vec{X}$  and  $\vec{Y}$ ,
- $\langle \vec{X}, \vec{Y} \rangle$  represents the scalar product of  $\vec{X}$  and of  $\vec{Y}$ , and
- $\|\vec{X}\|$  and  $\|\vec{Y}\|$  represent the respective norms of  $\vec{X}$  and  $\vec{Y}$ .

19 - Procedure according to claim 15, in which the distance determined between two positions is non-Euclidean.

20 - Procedure according to claim 19, in which the distance determined between two positions uses the scalar product defined by the following formula:

$$(\vec{X}, \vec{Y}) = \sum_{i=1}^n \frac{1}{k_i} x_i \cdot y_i$$

in which

- $\langle \vec{X}, \vec{Y} \rangle$  represents the scalar product of two positions  $\vec{X}$  and  $\vec{Y}$ ,
- $n$ , a natural integer, represents the dimension of the conceptual reference containing  $n$  index  $i$  axes with a natural

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integer  $i$  varying between 1 and  $n$ ,

- $x_i$  and  $y_i$  represent the respective coordinates of the positions  $X$  and  $Y$  along the index  $i$  axis and
- $k_i$  represents a weighting coefficient relative to the index  $i$  axis.

21 - Procedure according to claim 15, in which the resultant  $\rightarrow$  (Q) of the positions of all the conceptual words of the question is normalized.

22 - Procedure according to claim 15, in which a syntactic analysis is made of all the words of the question in order to extract the conceptual words.

23  
24 [sic] - Procedure according to claim 15, in which the inflected words of the question are transformed into their non-inflected form.

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